

January 30, 2020

EPA, Region V  
Air Management Division  
77 West Jackson Boulevard  
Chicago, IL 60604-3590

Des Gillen  
President  
BP-Husky Refining LLC  
4001 Cedar Point Road  
Oregon, OH 43616  
P 567.698.4529  
des.gillen@bp.com

Re: Refinery MACT II Compliance Report – 2<sup>nd</sup> Half 2019  
Catalytic Cracking Units  
Cyclic Catalytic Reforming Unit  
Sulfur Recovery Units  
BP-Husky Refining, LLC, Facility ID 04-48-02-0007

Dear Sir or Madam:

Please find enclosed the periodic report for BP-Husky Refining LLC covering the time period from July 1, 2019 through December 31, 2019. This report is submitted in accordance with the requirements of 40 CFR §63.1575 of Subpart UUU and 40 CFR §63.10(d)(5)(i) of Subpart A. This report also reflects the applicable updates to Subpart UUU through the technical correction amendments published in the Federal Register on November 26, 2018 (83 FR 60696).

I certify under penalty of law that, based on information and belief formed after reasonable inquiry, the statements and information contained in compliance report are true, accurate, and complete.

If you have any questions concerning the content of this report, please contact Jonathon Cathers at (567) 698-4404.

Sincerely,

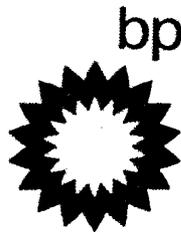
Des Gillen  
President – BP-Husky Refining LLC

cc: Peter Park, TDES  
Briana Mastriana, Ohio EPA

**REFINERY MACT II COMPLIANCE REPORT**  
(40 CFR 63 Subpart UUU)

**AND PERIODIC START-UP, SHUTDOWN, AND  
MALFUNCTION REPORT**  
(40 CFR 63 Subpart A)

**Reporting Period:**  
**July 1, 2019 – December 31, 2019**



BP - Husky Refining LLC

**BP-Husky Refining LLC**  
**P. O. Box 696**  
**Toledo, OH 43697-0696**

**BP-HUSKY REFINING, LLC**  
**MACT II COMPLIANCE REPORT**  
**40 CFR PART 63, SUBPART UUU**

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**SUBPART UUU COMPLIANCE REPORT - TABLE OF AFFECTED SOURCES AND GENERAL INFORMATION**

Affected Source	Affected Source Unit ID	Emission Limit For HAPs Control	COMS/CEMS/CPMS System Used For HAPs Limit
Fluidized Catalytic Cracking Unit Regeneration Vent – CO Boiler Exhaust Vent	P007	Ni emission limit of 0.001 lb/1,000 lb of coke burn-off	CO, CO <sub>2</sub> , and O <sub>2</sub> CEMS, COMS, FCC Regenerator Air Blower Flow Meter CPMS
Fluidized Catalytic Cracking Unit Regeneration Vent – CO Boiler Exhaust Vent	P007	Ni emission limit of 0.001 lb/1,000 lb of coke burn-off	COMS on CO Boiler Exhaust Stack
Fluidized Catalytic Cracking Unit Regeneration Vent	P007	CO emission limit of 500 ppmv (dry basis)	CO CEMS
Fluidized Catalytic Cracking Unit Regeneration Vent (During SU/SD/Hot Standby)	P007	Inlet velocity ≥ 20 feet per second and ≥ 1% O <sub>2</sub> during startup, shutdown and hot standby events.	O <sub>2</sub> CEMS and flow meter CPMS on Regen Vent
Fluidized Catalytic Cracking Unit Regeneration Vent Bypass Line	P007 Bypass of CO Boiler to Atmosphere	Ni emission limit of 0.001 lb/1,000 lb of coke burn-off	CO, CO <sub>2</sub> , and O <sub>2</sub> CEMS, COMS, FCC Regenerator Air Blower Flow Meter CPMS
Fluidized Catalytic Cracking Unit Regeneration Vent Bypass Line	P007 Bypass of CO Boiler to Atmosphere	Ni emission limit of 0.001 lb/1,000 lb of coke burn-off	COMS on CO FCCU Bypass Line
Fluidized Catalytic Cracking Unit Regeneration Vent Bypass Line	P007 Bypass of CO Boiler to Atmosphere	CO emission limit of 500 ppmv (dry basis)	CO CEMS on FCCU Bypass Line
SRU 1 and Tail Gas Treater Vent to Thermal Oxidizer	P009	SO <sub>2</sub> ≤ 250 ppm <sub>v</sub> (dry basis) at 0% excess air	SO <sub>2</sub> and O <sub>2</sub> CEMS at the SRU 1 Thermal Oxidizer
SRU 1 and Tail Gas Treater Vent to Thermal Oxidizer (During Startup or Shutdown)	P009	≥ 1,200 degrees Fahrenheit. in the firebox of the thermal oxidizer and ≥ 2% O <sub>2</sub> by volume (dry basis) in stack of thermal oxidizer.	O <sub>2</sub> CEMS and temperature sensor CPMS
SRU 2 & 3 (TRP SRU) and Tail Gas Treater Vent to Thermal Oxidizer	P037	SO <sub>2</sub> ≤ 250 ppm <sub>v</sub> (dry basis) at 0% excess air	SO <sub>2</sub> and O <sub>2</sub> CEMS at the SRU 2 & 3 Thermal Oxidizer
SRU 2 & 3 (TRP SRU) and Tail Gas Treater Vent to Thermal Oxidizer (During Startup or Shutdown)	P037	≥ 1,200 degrees Fahrenheit. in the firebox of the thermal oxidizer and ≥ 2% O <sub>2</sub> by volume (dry basis) in stack of thermal oxidizer.	O <sub>2</sub> CEMS and temperature sensor CPMS
Catalytic Reformer 3 Regenerator Vent (during coker burn-off and catalyst rejuvenation operations)	P803 Vent to Chlorsorb™ System	Chlorsorb™ inlet temperature < 387.2°F as an operating parameter for reducing HCl emissions by 97 wt%.	Temperature sensor CPMS

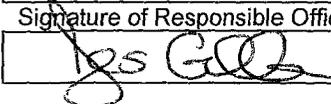
Note: The parameter monitoring table also includes determinations for compliance with work practice standards as required by Subpart UUU.

## REFINERY MACT II COMPLIANCE REPORT

**A. 63.1575(c)(1) Company name and address.**

Operating Permit Number (OPTIONAL)		Facility I.D. Number (OPTIONAL)	
		04 48 02 0007	
Responsible Official's Name/Title			
Des Gillen, President			
Street Address			
4001 Cedar Point Road			
City	State	ZIP Code	
Oregon	OH	43616	
Facility Name (if different from Responsible Official's Name)			
BP-Husky Refining LLC			
Facility Street Address (If different than Responsible Official's Street Address)			
(Same)			
Facility Local Contact Name		Title	Phone (OPTIONAL)
Jonathon Cathers		Interim Environmental Lead	567-698-4404
City	State	ZIP Code	
Oregon	OH	43616	

**B. 63.1575(c)(2) Based upon information and belief formed after a reasonable inquiry, I, as a responsible official of the above-mentioned facility, certify the information contained in this report is accurate and true to the best of my knowledge.**

Name of Responsible Official	Title	Date
Des Gillen	President	1/30/2020
Signature of Responsible Official		
		

**C. 63.1575(c)(3) Date of report and beginning and ending dates of the reporting period.**

Date Of This Report (mm/dd/yy)	
01/30/2020	
Beginning Date Of The Reporting Period (mm/dd/yy)	Ending Date Of The Reporting Period (mm/dd/yy)
7/1/2019	12/31/2019

## GENERAL DUTY REQUIREMENTS

The RSR promulgated amendments to Subpart UUU. As part of those amendments, startup, shutdown, and malfunction (SSM) provisions were removed. Under §63.1570 non-opacity standards, and opacity and visible emissions limits set forth in Subpart UUU apply at all times of operation. As a result, the BP-Husky Refining LLC (BPH) is complying with “general duty” requirements, as specified under §63.1570(c) at all times:

*“At all times, you must operate and maintain any affected source, including associated air pollution control and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if levels required by the applicable standard have been achieved. Determination of whether a source is operating in compliance with operation and maintenance requirements will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.”*

Accordingly, and per §63.1570(f), any instances for which an applicable emissions or operating limit was not met at the individual affected unit(s) during the reporting period, are documented in this report. During instances of non-conformance with the applicable requirements, the manufacturer’s specifications for operation and maintenance activities were followed.

## UNIT UPSETS THIS PERIOD

There were three unit upsets worth noting this semiannual period. These are discussed below and impacted the FCCU, SRU1 and SRU2/3 process units.

**SRU1:** The SRU1 thermal oxidizer tripped off at 10:41AM August 7, 2019. BPH pulled feed from the unit immediately and relit the thermal oxidizer (TO) at 12:02 PM that same day. The TO temperature recovered to above 1,200 °F by 4:27 PM that afternoon. However, during the period from 10:41 AM to 4:27 PM on August 7, 2019 the unit deviated from the Subpart UUU requirement to operate the TO above 1,200 °F during startups and shutdowns (SU/SD). At no time during this period did the unit O<sub>2</sub> content drop below 2%. After 4:27 PM August 7<sup>th</sup> until the unit was restarted (acid gas feed reintroduced) on August 13<sup>th</sup>, the unit did not have any deviations of the Subpart UUU nor were there any incidents during the startup.

**FCCU/COB:** On November 13, 2019, the CO Boiler tripped at approximately 2:35 AM due to freeze-up of a control instrument. At 2:44 AM, the Fluidized Catalytic Cracker Unit (FCCU) feed was pulled and its exhaust gases (regenerator overhead) were diverted to the FCCU bypass stack. The FCCU was held in hot standby (firing torch oil) until approximately 2:42 PM Nov. 15, 2019 when feed was reintroduced. The unit was stabilized and regenerator overhead lineup restored to the CO boiler just before 9:00 PM November 15, 2019. During the downtime/standby operation, the FCCU complied at all times with the Subpart UUU alternative Startup/Shutdown/Standby limits of 1% O<sub>2</sub> and 20 ft/sec in 63.1565 (a)(5)(ii) and 63.1566 (a)(5)(ii) respectively. There were no observed emissions or operating limit exceedances before or after the event. However, during the event, the CO Boiler continuous opacity monitor became fouled and was not functioning. The erroneous opacity readings resulting from the monitor downtime were not immediately recognized and continued for approximately 21 hours after the unit was returned to normal operation. Repairs were made at 5:56 PM November 16, 2019.

**SRU2/3:** On November 13, 2019, the TGTU Quench tower associated with SRU 2/3 became plugged due to system instability caused by upstream upsets relating, in part, to the previously mentioned CO boiler trip. The SRU/TGTU instability caused high sulfur levels to pass to the TGU. This high sulfur in the tail gas caused the TGTU quench tower to plug, and required it to be bypassed for cleaning, sending a higher rate of sulfur material to the thermal oxidizer. An exceedance of the SRU 2/3 SO<sub>2</sub> limit of 250 ppm (12 hr average) was recorded from approximately 7:00 PM November 13 to 9:00 PM November 17, 2019. Additionally, an exceedance of this limit may also have occurred during this incident between approximately 7:00 PM November 13 to 9:00 PM November 17, 2019 during which time the SO<sub>2</sub> CEMS experienced downtime as noted in the report. BPH tried multiple methods of removing the pluggage in the quench tower and was finally successful with caustic washing.

Outside of the events in this report, BPH complied with all applicable emissions, operating, and monitoring requirements under Subpart UUU.

**STATEMENT OF NO DEVIATION**

In accordance with 63.1575(c)(4), during the reporting period, there were:

Affected Source Unit ID	Emission Limit	For Emission Limitations		Work Practice Standard	For Work Practice Standards		If There Were No Deviations From Emission Limitations AND Work Practice Standards Where A COMS, CEMS, or a CPMS Is In Use, then:
		Deviations	No Deviations		Deviations	No Deviations	
P007 Catalyst Regenerator Vent	Nickel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Operate According To The OMMMP	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/> Not Applicable <input type="checkbox"/> The COMS/CEMS/CPMS was not inoperative, inactive, malfunctioning, out-of control, repaired, or adjusted. This report contains no further information on this affected source for the emissions being monitored. <input checked="" type="checkbox"/> There were no deviations, but further reporting is required for the COMS/CEMS/CPMS. See the pages attached for this affected source.
	CO	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/> Not Applicable <input type="checkbox"/> The CEMS was not inoperative, inactive, malfunctioning, out-of control, repaired, or adjusted. This report contains no further information on this affected source for the emissions being monitored. <input checked="" type="checkbox"/> There were no deviations, but further reporting is required for the CEMS. See the pages attached for this affected source.		
	Velocity [SU, SD, Hot standby only]	NA	NA		<input type="checkbox"/> Not Applicable <input checked="" type="checkbox"/> The CPMS was not inoperative, inactive, malfunctioning, out-of control, repaired, or adjusted. This report contains no further information on this affected source for the emissions being monitored. <input type="checkbox"/> There were no deviations, but further reporting is required for the CPMS. See the pages attached for this affected source.		
	O <sub>2</sub> [SU, SD, Hot standby only]	NA	NA		<input type="checkbox"/> Not Applicable <input checked="" type="checkbox"/> The CPMS was not inoperative, inactive, malfunctioning, out-of control, repaired, or adjusted. This report contains no further information on this affected source for the emissions being monitored. <input type="checkbox"/> There were no deviations, but further reporting is required for the CPMS. See the pages attached for this affected source.		

Refinery MACT II Compliance Report – 2<sup>nd</sup> Half 2019  
 BP Husky Toledo Refinery  
 For FCUs, CRUs and SRPs  
 January 30, 2020

Affected Source Unit ID	Emission Limit	For Emission Limitations		Work Practice Standard	For Work Practice Standards		If There Were No Deviations From Emission Limitations AND Work Practice Standards Where A COMS, CEMS, or a CPMS Is In Use, then:
		Deviations	No Deviations		Deviations	No Deviations	
P007 Bypass Line from the Regenerator Vent Stream around the CO Boiler to the Atmosphere	Nickel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Operate According To The OMMMP	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/> Not Applicable <input checked="" type="checkbox"/> The COMS/CEMS/CPMS was not inoperative, inactive, malfunctioning, out-of control, repaired, or adjusted. This report contains no further information on this affected source for the emissions being monitored. <input type="checkbox"/> There were no deviations, but further reporting is required for the COMS/CEMS/CPMS. See the pages attached for this affected source.
	CO	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> The CEMS was not inoperative, inactive, malfunctioning, out-of control, repaired, or adjusted. This report contains no further information on this affected source for the emissions being monitored. <input type="checkbox"/> There were no deviations, but further reporting is required for the CEMS. See the pages attached for this affected source.
	SO <sub>2</sub>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Operate According To The OMMMP	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/> The CEMS was not inoperative, inactive, malfunctioning, out-of control, repaired, or adjusted. This report contains no further information on this affected source for the emissions being monitored. <input checked="" type="checkbox"/> There were no deviations, but further reporting is required for the CEMS. See the pages attached for this affected source.
	Temp. [SU, SD only]	NA	NA		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> The CPMS was not inoperative, inactive, malfunctioning, out-of control, repaired, or adjusted. This report contains no further information on this affected source for the emissions being monitored. <input type="checkbox"/> There were no deviations, but further reporting is required for the CPMS. See the pages attached for this affected source.

Subpart UUU Compliance Report  
For FCUs, CRUs and SRPs

BP Husky Toledo Refinery  
January 30, 2020

Affected Source Unit ID	Emission Limit	For Emission Limitations		Work Practice Standard	For Work Practice Standards		If There Were No Deviations From Emission Limitations AND Work Practice Standards Where A COMS, CEMS, or a CPMS Is in Use, then:
		Deviations	No Deviations		Deviations	No Deviations	
	O <sub>2</sub> [SU, SD, only]	NA	NA		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/> Not Applicable <input checked="" type="checkbox"/> The CEMS was not inoperative, inactive, malfunctioning, out-of control, repaired, or adjusted. This report contains no further information on this affected source for the emissions being monitored. <input type="checkbox"/> There were no deviations, but further reporting is required for the CEMS. See the pages attached for this affected source.
	SO <sub>2</sub>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> The CEMS was not inoperative, inactive, malfunctioning, out-of control, repaired, or adjusted. This report contains no further information on this affected source for the emissions being monitored. <input type="checkbox"/> There were no deviations, but further reporting is required for the CEMS. See the pages attached for this affected source.
P037 - SRU 2 & 3 (TRP SRU) and Tail Gas Treater Vent to Thermal Oxidizer	Temp. [SU, SD only]	NA	NA	Operate According To The OMMMP	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> The CPMS was not inoperative, inactive, malfunctioning, out-of control, repaired, or adjusted. This report contains no further information on this affected source for the emissions being monitored. <input type="checkbox"/> There were no deviations, but further reporting is required for the CPMS. See the pages attached for this affected source.
	O <sub>2</sub> [SU, SD, only]	NA	NA		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> The CEMS was not inoperative, inactive, malfunctioning, out-of control, repaired, or adjusted. This report contains no further information on this affected source for the emissions being monitored. <input type="checkbox"/> There were no deviations, but further reporting is required for the CEMS. See the pages attached for this affected source.

Refinery MACT II Compliance Report – 2<sup>nd</sup> Half 2019  
 BP Husky Toledo Refinery  
 For FCUs, CRUs and SRPs  
 January 30, 2020

Affected Source Unit ID	Emission Limit	For Emission Limitations		Work Practice Standard	For Work Practice Standards		If There Were No Deviations From Emission Limitations AND Work Practice Standards Where A COMS, CEMS, or a CPMS Is In Use, then:	
		Deviations	No Deviations		Deviations	No Deviations		
P803- Catalytic Reformer 3 Regenerator Vent (during coke burn-off and catalyst rejuvenation operations)	Temp.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Operate According To The OMMMP	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> The CPMS was not inoperative, inactive, malfunctioning, out-of control, repaired, or adjusted. This report contains no further information on this affected source for the emissions being monitored. <input type="checkbox"/> There were no deviations, but further reporting is required for the CPMS. See the pages attached for this affected source.	
	Inlet catalyst chloride conc.	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>		Not Applicable. COMS/CEMS/CPMS not in use.
	Outlet catalyst chloride conc.	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>		Not Applicable. COMS/CEMS/CPMS not in use.

**P007 CATALYST REGENERATOR VENT – REFINERY MACT II COMPLIANCE REPORT**

**DEVIATION SUMMARY FOR PARAMETER MONITORING SYSTEMS (NO COMS/CEMS)**

**Affected Source:** P007 Catalyst Regenerator Vent

**Pollutant/Parameter Monitored:**  $Q_a$  – Volumetric flow rate of air to the regenerator (dscf/min),  
 $Q_r$  – Volumetric flow rate of exhaust from the regenerator (dscf/min),  
 $Q_{mon}$  – Calculated flow rate of exhaust before air or gas streams (dscf/min) per alternate monitoring parameter issued by USEPA Region V on 7/26/2007,  
 %  $CO_2$  – Carbon dioxide concentration in regenerator exhaust (dry basis),  
 %  $O_2$  – Oxygen concentration in regenerator exhaust (dry basis),  
 %  $CO$  – Carbon monoxide concentration in regenerator exhaust (dry basis)  
 % Opacity – Opacity on CO Boiler exhaust  
 $E_{cat}$  – Ni concentration on the equilibrium catalyst from weekly or more recent measurements (ppm<sub>w</sub>)  
 $F_{fuel}$  – CO Boiler fuel gas usage (dscf/hr)  
 HV – Heating value of the CO Boiler fuel gas as low heating value (BTU/dscf)  
 %  $O_2^{cob}$  – Oxygen concentration in CO Boiler exhaust  
 $T_{stack}$  – CO Boiler outlet stack temperature

[NOTE: See "Deviation Summary For Affected Sources Using a COMS for Opacity"]

**Emission Limit:** Ni emission limit of 0.001 lb/1,000 lbs of coke burn-off.

**Operating Limit:** Maintain the daily average Ni operating value: < 63,490 (%-acfm-ppmw-hr/lb coke burn)

**(d)(1)\* Total operating time during the reporting period:** 4,351 hours (4,351 hours through the CO Boiler)

**PROVIDE THE INFORMATION IN THE TABLE BELOW ONLY FOR THE CORRESPONDING REGULATORY REQUIREMENTS**

**(d)(2) Emission limitation and work practice standards, (d)(3) Monitor downtime incidents**

Number (d)(3)	Type And Description (Deviation Of Emission Limit and Work Practice Standard, or Monitor Downtime) (d)(2), (d)(3)	Date, Time and Duration of Deviation	Duration (hours)	Cause (Including Unknown, if Applicable)
1	(d)(3) Monitor Downtime – FCC Regen CO, CO <sub>2</sub> & O <sub>2</sub> CEMS down	7/2/2019 14:00 to 7/2/2019 17:00	3	QA calibration
2	(d)(3) Monitor Downtime – FCC Regen CO, CO <sub>2</sub> & O <sub>2</sub> CEMS down	7/3/2019 9:00 to 7/3/2019 12:00	4	Other known causes
3	(d)(3) Monitor Downtime – FCC Regen CO, CO <sub>2</sub> & O <sub>2</sub> CEMS down	7/6/2019 10:00 to 7/6/2019 13:00	3	Other known causes
4	(d)(3) Monitor Downtime – FCC Regen CO <sub>2</sub> & O <sub>2</sub> CEMS down	7/9/2019 9:00 to 7/9/2019 14:00	5	Other known causes

Refinery MACT II Compliance Report – 2<sup>nd</sup> Half 2019  
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Number (d)(3)	Type And Description (Deviation Of Emission Limit and Work Practice Standard, or Monitor Downtime) (d)(2), (d)(3)	Date, Time and Duration of Deviation	Duration (hours)	Cause (Including Unknown, if Applicable)
5	(d)(3) Monitor Downtime – FCC Regen CO <sub>2</sub> & O <sub>2</sub> CEMS down	7/10/2019 7:00 to 7/10/2019 10:00	3	Other known causes
6	(d)(3) Monitor Downtime – temperature indicator down	8/15/2019 18:49 to 8/15/2019 19:49	1	Monitor equipment malfunction
7	(d)(3) Monitor Downtime – temperature indicator down	8/15/2019 18:51 to 8/16/2019 1:51	7	Monitor equipment malfunction
8	(d)(3) Monitor Downtime – temperature indicator down	8/15/2019 18:59 to 8/16/2019 4:59	10	Monitor equipment malfunction
9	(d)(3) Monitor Downtime – temperature indicator down	8/15/2019 19:10 to 8/15/2019 20:10	1	Monitor equipment malfunction
10	(d)(3) Monitor Downtime – temperature indicator down	9/30/2019 20:24 to 9/30/2019 22:24	2	Monitor equipment malfunction
11	(d)(3) Monitor Downtime – temperature indicator down	9/30/2019 20:34 to 9/30/2019 21:34	1	Monitor equipment malfunction
12	(d)(3) Monitor Downtime – temperature indicator down	10/2/2019 14:45 to 10/2/2019 15:45	1	Monitor equipment malfunction
13	(d)(3) Monitor Downtime – temperature indicator down	10/2/2019 14:47 to 10/2/2019 15:47	1	Monitor equipment malfunction
14	(d)(3) Monitor Downtime – temperature indicator down	10/2/2019 14:49 to 10/2/2019 15:49	1	Monitor equipment malfunction
15	(d)(3) Monitor Downtime – temperature indicator down	10/31/2019 10:10 to 10/31/2019 11:10	1	Monitor equipment malfunction
16	(d)(3) Monitor Downtime – temperature indicator down	10/31/2019 10:13 to 10/31/2019 11:13	1	Monitor equipment malfunction
17	(d)(3) Monitor Downtime – Opacity monitor lens obstruction	11/15/2019 20:37 to 11/16/2019 18:00	21	Non-monitor equipment malfunction (Monitor malfunction for 73 hrs (starting 11/13 17:00 hrs) but unit initially in Standby/Startup. Unit running and opacity analyzer needed for MACT starting at 11/16 20:37 hrs.)
18	(d)(3) Monitor Downtime – FCC Regen CO <sub>2</sub> & O <sub>2</sub> CEMS down	11/27/2019 13:00 to 11/27/2019 14:00	1	Monitor equipment malfunction
19	(d)(3) Monitor Downtime – Opacity monitor QA calibration	12/04/2019 10:00 to 12/04/2019 16:00	6	QA Calibration

\* All document references are from 40 CFR 63.1575 unless otherwise specifically indicated.

**PROVIDE THE INFORMATION IN THE TABLE BELOW ONLY FOR THE CORRESPONDING REGULATORY REQUIREMENTS FOR EACH DEVIATION FROM AN EMISSION LIMITATION**

**(d)(3) – Monitor Downtime, (e)(2) – COMS/CEMS Inoperative, (e)(3) – COMS/CEMS Out of Control**

Number (d)(3)	Date/Time Start (d)(3), (e)(2) - (e)(3)	Date/Time End (e)(2) - (e)(3)	Duration (hours)	Cause (Including Unknown, if Applicable)	Type (Downtime, Inoperative, Out of Control)	Corrective Action For Each Out of Control Period (e)(3), 63.8(c)(8)
2	7/3/2019 at 9:00 hours	7/3/2019 at 12:00 hours	4	Other known causes	CEMS inoperative	Down during recalibration of SO <sub>2</sub> /NO <sub>x</sub> CEMS. Returned to Service.
3	7/6/2019 at 10:00 hours	7/6/2019 at 13:00 hours	3	Other known causes	CEMS inoperative	Steamed sample line purged with N <sub>2</sub> . Recalibrated analyzer and returned to service.
4	7/9/2019 at 9:00 hours	7/9/2019 at 14:00 hours	5	Other known causes	CEMS inoperative	Steamed sample line purged with N <sub>2</sub> . Recalibrated analyzer and returned to service.
5	7/10/2019 at 7:00 hours	7/10/2019 at 10:00 hours	3	Other known causes	CEMS inoperative	Additional Mott filter added to the existing Mott filter; system couldn't be isolated. Returned to Service.
6	11/15/2019 20:37 hours	11/16/2019 18:00 hours	21	Other known causes	COMS out of control	Foreign material obstructed the analyzer lens.
7	11/27/2019 at 13:00 hours	11/27/2019 at 14:00 hours	1	Monitor equipment malfunction	CEMS inoperative	Analyzer failed daily validation. Recalibrated analyzer and returned to service.
8	12/04/2019 10:00 hours	12/04/2019 16:00 hours	6	QA calibration	COMS inoperative	Quarterly stack audit completed



**DEVIATION SUMMARY FOR A COMS AND/OR A CEMS**

**Affected Source:** P007 Catalyst Regenerator Vent

**Pollutant/Parameter:** CO – Carbon monoxide concentration in regenerator exhaust

**Emission Limit:** CO concentration ≤ 500 ppmv (dry basis)

(e)(9) HAP monitored at the affected source and reported here: CO (surrogate for organic HAPs)

(e)(9) Emission limitation: CO ≤ 500 ppmv, dry basis

(e)(10) Process unit(s) description: 55,000 BPD (annual avg.) UOP FCC Unit with B&W CO Boiler rated at 669 MMBTU/hr.

(e)(11) COMS/CEMS manufacturer and model no.: AO2040 Series: AT2056 URAS 14

(e)(12) Date of latest certification or audit for the COMS or CEMS: 5/2/2019

(d)(1) Total operating time of the affected source during the reporting period: 4,351 hours (4,351 hours through the CO Boiler)

**PROVIDE THE INFORMATION IN THE TABLE BELOW ONLY FOR THE CORRESPONDING REGULATORY REQUIREMENTS**

(d)(2) Emission limitation and work practice standards, (d)(3) Monitor downtime incidents

Number (d)(3)	Type And Description (Deviation Of Emission Limit and Work Practice Standard, or Monitor Downtime) (d)(2), (d)(3)	Date, Time and Duration of Deviation	Duration (hours)	Cause (Including Unknown, if Applicable)
1	(d)(3) Monitor downtime	8/15/2019 14:00 to 8/15/2019 15:00	1	Recalibration for drift.
2	(d)(3) Monitor downtime	8/22/2019 7:00 to 8/23/2019 9:00	26	Analyzer failed daily validation.

**PROVIDE THE INFORMATION IN THE TABLE BELOW ONLY FOR THE CORRESPONDING REGULATORY REQUIREMENTS FOR EACH DEVIATION FROM AN EMISSION LIMITATION**

**(e)(3) – Monitor Downtime, (e)(2) – COMS/CEMS Inoperative, (e)(3) – COMS/CEMS Out Of Control**

Number	Date/Time Start	Date/Time End	Duration (hours)	Cause (Including Unknown, if Applicable)	Type (Downtime, Inoperative, Out of Control)	Corrective Action For Each Out of Control Period
	(d)(3), (e)(2) - (e)(3)	(e)(2) - (e)(3)			(e)(2) - (e)(3)	
1	8/15/2019 14:00 hours	8/15/2019 15:00 hours	1	Recalibration for drift.	CEMS inoperative	Recalibration analyzer and return to service
2	8/22/2019 7:00 hours	8/23/2019 9:00 hours	26	Analyzer failed daily validation.	CEMS inoperative	Recalibration analyzer and return to service

**PROVIDE THE DEVIATION SUMMARY IN THE TABLES BELOW**

**(e)(5)(e)(7) – Deviation Summary, (e)(6)(e)(8) – Deviation Breakdown**

Emissions Data Deviation Summary		COMS/CEMS Performance Summary	
(e)(5), (e)(6)		(e)(7), (e)(8)	
1.	Duration of the deviations during reporting period due to:	Time in hours	1. COMS / CEMS downtime in reporting period due to
a.	Control equipment problems	0	a. Monitoring equipment malfunctions
b.	Process problems	0	b. Non-monitoring equipment malfunctions
c.	Other known causes	0	c. Quality assurance/quality control calibrations
d.	Unknown causes	0	d. Other known causes
			e. Unknown causes
2.	Summary of the total duration of the deviation	0	2. Total COMS / CEMS downtime
3.	(Total duration of the deviation) / (Total source operating time) x (100) = %	0%	3. ((Total COMS/CEMS downtime) / (Total affected source operating time)) x (100) = %
			Time in hours
			27
			0
			0
			0
			0
			27
			0.6%

**(e)(13) - Describe any changes since the last reporting period in the CEMS or COMS, processes, or controls.**  
 No changes made during the reporting period.

**PERFORMANCE TEST SUMMARY AND REQUESTED EMISSION STANDARD CHANGES**

(f)(1) - There was no performance test conducted during this reporting period.

(f)(2) – Provide any changes to an emission standard being requested in this report.

No changes being requested in this report.

**P007 CATALYST REGENERATOR VENT – REFINERY MACT II COMPLIANCE REPORT**

**DEVIATION SUMMARY FOR PARAMETER MONITORING SYSTEMS (NO COMS/CEMS)**

**Affected Source:** P007 Catalyst Regenerator Vent during Startup, Shutdown and Hot Standby Events

**Pollutant/Parameter Monitored:**

Qr – Volumetric flow rate of exhaust from the regenerator (dscf/min),

**Operating Limit:** Maintain the Inlet velocity  $\geq$  20 feet per second) during startup, shutdown and hot standby events.

(d)(1)\* **Total operating time during the reporting period:** 65 hours ( 11/13/2019 2:44 AM to 11/15/2019 8:37 PM; FCCU feed pulled in Hot Standby mode and then started up.)

**PROVIDE THE INFORMATION IN THE TABLE BELOW ONLY FOR THE CORRESPONDING REGULATORY REQUIREMENTS**

(d)(2) Emission limitation and work practice standards, (d)(3) Monitor downtime incidents

Number (d)(3)  None	Type And Description (Deviation Of Emission Limit and Work Practice Standard, or Monitor Downtime) (d)(2), (d)(3)	Date, Time and Duration of Deviation	Duration (hours)	Cause (Including Unknown, if Applicable)

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 BP Husky Toledo Refinery  
 For FCUs, CRUs and SRPs  
 January 30, 2020

**P007 CATALYST REGENERATOR VENT – REFINERY MACT II COMPLIANCE REPORT**

**DEVIATION SUMMARY FOR PARAMETER MONITORING SYSTEMS (NO COMS/CEMS)**

**Affected Source:** P007 Catalyst Regenerator Vent during Startup, Shutdown and Hot Standby Events

**Pollutant/Parameter Monitored:**

% O<sub>2</sub> – Oxygen concentration in regenerator exhaust (dry basis),

**Operating Limit:** Maintain  $\geq$  1% O<sub>2</sub> by volume (dry basis) during startup, shutdown and hot standby events.

**(d)(1)\* Total operating time during the reporting period:** 65 hours ( 11/13/2019 2:44 AM to 11/15/2019 8:37 PM: FCCU feed pulled in Hot Standby mode and then started up)

**PROVIDE THE INFORMATION IN THE TABLE BELOW ONLY FOR THE CORRESPONDING REGULATORY REQUIREMENTS**

**(d)(2) Emission limitation and work practice standards, (d)(3) Monitor downtime incidents**

Number (d)(3)	Type And Description (Deviation Of Emission Limit and Work Practice Standard, or Monitor Downtime) (d)(2), (d)(3)	Date, Time and Duration of Deviation	Duration (hours)	Cause (Including Unknown, if Applicable)
None				

\* All document references are from 40 CFR 63.1575 unless otherwise specifically indicated.

**P007 BYPASS LINE FROM THE REGENERATOR VENT STREAM AROUND THE CO BOILER TO THE ATMOSPHERE – REFINERY MACT II COMPLIANCE REPORT**

**DEVIATION SUMMARY FOR PARAMETER MONITORING SYSTEMS (NO COMS/CEMS)**

**Affected Source:** P007 Catalyst Regenerator Vent (During Bypass around CO Boiler to atmosphere)

**Pollutant/Parameter Monitored:**  $Q_a$  – Volumetric flow rate of air to the regenerator (dscf/min),

$Q_r$  – Volumetric flow rate of exhaust from the regenerator (dscf/min),

$Q_{mon}$  – Calculated flow rate of exhaust before air or gas streams (dscf/min) per alternate monitoring parameter issued by USEPA Region V on 7/26/2007.

% CO<sub>2</sub> – Carbon dioxide concentration in regenerator exhaust (dry basis),

% O<sub>2</sub> – Oxygen concentration in regenerator exhaust (dry basis),

% CO – Carbon monoxide concentration in regenerator exhaust (dry basis)

% Opacity – Opacity on bypass stack

$E_{cat}$  – Ni concentration on the equilibrium catalyst from weekly or more recent measurements (ppm<sub>w</sub>)

$T_{stack}$  – Bypass stack temperature

[NOTE: See "Deviation Summary For Affected Sources Using a COMS for Opacity"]

**Emission Limit:**

Ni emission limit of 0.001 lb/1,000 lbs of coke burn-off.

**Operating Limit:**

Maintain the daily average Ni operating value: < 63,490 (%-acfm-ppmw-hr/lb coke burn)

**(d)(1)\* Total operating time during the reporting period:** 0 hours of Bypass operating time with FCCU unit in Normal Operating mode

(4,351 hours of FCC Regenerator operating time through CO Boiler)

(65 hours of Startup/Shutdown/Hot Standby – Ni limit not applicable)

**PROVIDE THE INFORMATION IN THE TABLE BELOW ONLY FOR THE CORRESPONDING REGULATORY REQUIREMENTS**

**(d)(2) Emission limitation and work practice standards, (d)(3) Monitor downtime incidents**

Number (d)(3)	Type And Description (Deviation Of Emission Limit and Work Practice Standard, or Monitor Downtime) (d)(2), (d)(3)	Date, Time and Duration of Deviation	Duration (hours)	Cause (Including Unknown, if Applicable)
NA				

\* All document references are from 40 C.F.R 63.1575 unless otherwise specifically indicated.

**PROVIDE THE INFORMATION IN THE TABLE BELOW ONLY FOR THE CORRESPONDING REGULATORY REQUIREMENTS FOR EACH DEVIATION FROM AN EMISSION LIMITATION**

**(d)(3) – Monitor Downtime, (e)(2) – COMS/CEMS Inoperative, (e)(3) – COMS/CEMS Out Of Control**

Number	Date/Time Start	Date/Time End	Duration (hours)	Cause (Including Unknown, if Applicable)	Type (Downtime, Inoperative, Out of Control)	Corrective Action For Each Out of Control Period
	(d)(3), (e)(2) - (e)(3)	(e)(2) - (e)(3)				
NA						

**PROVIDE THE DEVIATION SUMMARY IN THE TABLES BELOW**

**(e)(5)/(e)(7) – Deviation Summary, (e)(6)/(e)(8) – Deviation Breakdown**

Emissions Data Deviation Summary		COMS/CEMS Performance Summary	
(e)(5), (e)(6)		(e)(7), (e)(8)	
1.	Duration of the deviations during reporting period due to:	Time in hours	1. COMS / CEMS downtime in reporting period due to
a.	Control equipment problems	NA	a. Monitoring equipment malfunctions
b.	Process problems	NA	b. Non-monitoring equipment malfunctions
c.	Other known causes	NA	c. Quality assurance/quality control calibrations
d.	Unknown causes	NA	d. Other known causes
			e. Unknown causes
2.	Summary of the total duration of the deviation	NA	2. Total COMS / CEMS downtime
3.	(Total duration of the deviation) / (Total source operating time) x (100) = %	NA	3. ((Total COMS/CEMS downtime) / (Total affected source operating time)) x (100) = %
			0% (bypass) 0% (Regen)

**(e)(13) - Describe any changes since the last reporting period in the CEMS or COMS, processes, or controls.**

No changes made during the reporting period.

**PERFORMANCE TEST SUMMARY AND REQUESTED EMISSION STANDARD CHANGES**

**(f)(1)** - There was no performance test conducted during this reporting period.

**(f)(1)** – The bypass operated during this reporting period. However, all of the time the unit was in the bypass stack, the unit was either in Hot-Standby or was being started up. Accordingly, the Ni Operating limit was not applicable during this period. There was no performance evaluation conducted on the FCC Regen Line CO, CO<sub>2</sub>, and O<sub>2</sub> CEMS or COMS during the period.

**REQUESTED EMISSION STANDARD CHANGES**

**(f)(2)** – Provide any changes to an emission standard being requested in this report.

No changes being requested in this report.

Refinery MACT II Compliance Report – 2<sup>nd</sup> Half 2019  
 BP Husky Toledo Refinery  
 For FCUs, CRUs and SRPs  
 January 30, 2020

**DEVIATION SUMMARY FOR PARAMETER MONITORING SYSTEMS (NO COMS/CEMS)**

**Affected Source:** P007 Bypass Line from the Regenerator Vent Stream Around the CO Boiler to the Atmosphere

**Pollutant/Parameter Monitored:** For the FCCU Regen exhaust, continuous monitoring of bypass stack temperature in °F

**Emission Limit:** Temperature > 500°F indicate bypass stack is in use per alternate monitoring parameter issued by USEPA Region V on 1/7/2009.

**(d)(1)\* Total operating time during the reporting period:** 4,416 hours of Bypass Temperature monitoring operating time (Entire 2H19)

**PROVIDE THE INFORMATION IN THE TABLE BELOW ONLY FOR THE CORRESPONDING REGULATORY REQUIREMENTS**

**(d)(2) Emission limitation and work practice standards, (d)(3) Monitor downtime incidents**

Number (d)(3)	Type And Description (Deviation Of Emission Limit and Work Practice Standard, or Monitor Downtime) (d)(2), (d)(3)	Date, Time and Duration of Deviation	Duration (hours)	Cause (Including Unknown, if Applicable)
None				

\* All document references are from 40 CFR 63.1575 unless otherwise specifically indicated.

**(e)(13) - Describe any changes since the last reporting period in the CEMS or COMS, processes, or controls.**  
 No changes made during the reporting period.

**REQUESTED EMISSION STANDARD CHANGES**

**(f)(2) – Provide any changes to an emission standard being requested in this report.**

No changes being requested in this report.

**DEVIATION SUMMARY FOR A COMS AND/OR A CEMS**

**Affected Source:** P007 Bypass Line from the Regenerator Vent Stream Around the CO Boiler to the Atmosphere

**Pollutant/Parameter:** % CO – Carbon monoxide concentration in regenerator exhaust (dry basis)

**Emission Limit:** CO ≤ 500 ppm<sub>v</sub>, dry basis

**(e)(9) HAP monitored at the affected source and reported here:** For the FCCU Regen exhaust, continuous monitoring of Carbon Monoxide (a surrogate for organic HAPs) while the Regenerator Vent Line is tied to the CO Boiler Bypass Stack.

**(e)(9) Emission limitation:** CO ≤ 500 ppm<sub>v</sub>, dry basis

**(e)(10) Process unit(s) description:** 55,000 BPD (annual avg.) UOP FCC Unit with B&W CO Boiler rated at 669 MMBTU/hr.

**(e)(11) COMS/CEMS manufacturer and model no.:** ABB URAS 14 (CO)

**(e)(12) Date of latest certification or audit for the COMS or CEMS:** 6/11/2019

**(d)(1) Total operating time of the affected source during the reporting period:** 0 hours of Bypass operating time with FCCU unit in Normal mode (4,351 hours of FCC Regenerator operating time through CO Boiler) (65 hours of Startup/Shutdown/Hot Standby – Nil limit not applicable)

**PROVIDE THE INFORMATION IN THE TABLE BELOW ONLY FOR THE CORRESPONDING REGULATORY REQUIREMENTS**

**(d)(2) Emission limitation and work practice standards, (d)(3) Monitor downtime incidents**

Number (d)(3)	Type And Description (Deviation Of Emission Limit and Work Practice Standard, or Monitor Downtime) (d)(2), (d)(3)	Date, Time and Duration of Deviation	Duration (hours)	Cause (Including Unknown, if Applicable)
NA				

**PROVIDE THE INFORMATION IN THE TABLE BELOW ONLY FOR THE CORRESPONDING REGULATORY REQUIREMENTS FOR EACH DEVIATION FROM AN EMISSION LIMITATION**

**(d)(3) – Monitor Downtime, (e)(2) – COMS/CEMS Inoperative, (e)(3) – COMS/CEMS Out Of Control**

Number	Date/Time Start	Date/Time End	Duration (hours)	Cause (Including Unknown, if Applicable)	Type (Downtime, Inoperative, Out of Control)		Corrective Action For Each Out of Control Period
	(d)(3), (e)(2) - (e)(3)	(e)(2) - (e)(3)			(e)(2) - (e)(3)	(e)(3), 63.8(c)(8)	
None							

**PROVIDE THE DEVIATION SUMMARY IN THE TABLES BELOW**

**(e)(5)/(e)(7) – Deviation Summary, (e)(6)/(e)(8) – Deviation Breakdown**

Emissions Data Deviation Summary		COMS/CEMS Performance Summary	
(e)(5), (e)(6)		(e)(7), (e)(8)	
1. Duration of the deviations during reporting period due to:	Time in hours	1. COMS / CEMS downtime while bypass in operations in reporting period due to	Time in hours
a. Control equipment problems	0	a. Monitoring equipment malfunctions	0
b. Process problems	0	b. Non-monitoring equipment malfunctions	0
c. Other known causes	0	c. Quality assurance/quality control calibrations	0
d. Unknown causes	0	d. Other known causes	0
		e. Unknown causes	0
2. Summary of the total duration of the deviation	0	2. Total COMS / CEMS downtime	0
3. (Total duration of the deviation) / (Total source operating time) x (100) = %	0% (bypass) 0% (Regen)	3. ((Total COMS/CEMS downtime) / (Total affected source operating time)) x (100) = %	0% (bypass) 0% (Regen)

**(e)(13) - Describe any changes since the last reporting period in the CEMS or COMS, processes, or controls.**

No changes made during the reporting period.

**PERFORMANCE TEST SUMMARY AND REQUESTED EMISSION STANDARD CHANGES**

**(f)(1) -** There was no performance test conducted during this reporting period.

**(f)(1) -** There was no performance evaluation conducted on the FCCU Regen Line CO CEMS during this reporting period.

**(f)(2) – Provide any changes to an emission standard being requested in this report.**

No changes being requested in this report.

**P009 SRU 1 AND TAIL GAS TREATER VENT TO THERMAL OXIDIZER – REFINERY MACT II COMPLIANCE REPORT**

**DEVIATION SUMMARY FOR A COMS AND/OR A CEMS**

**Affected Source:** P009 SRU 1 and Tail Gas Treater Vent to Thermal Oxidizer

**Pollutant/Parameter:** SO<sub>2</sub>

**Emission Limit:** 250 ppm<sub>v</sub> dry basis of reduced sulfur compounds calculated as SO<sub>2</sub> at 0% excess air

**(e)(9) HAP monitored at the affected source and reported here:** SO<sub>2</sub> (surrogate for reduced sulfur HAPs)

**(e)(10) Process Unit(s) Description:** Existing sulfur recovery unit with one Claus Train and Tail Gas Treater.

**(e)(11) COMS/CEMS Manufacturer And Model No.:** Ametek Model No. 919 SO<sub>2</sub>/ O<sub>2</sub>

**(e)(12) Date of latest certification or audit for the COMS or CEMS:** 4/16/2019

**(d)(1) Total operating time of the affected source during the reporting period:** 4,156.5 hours

**PROVIDE THE INFORMATION IN THE TABLE BELOW ONLY FOR THE CORRESPONDING REGULATORY REQUIREMENTS**

**(d)(2) Emission limitation and work practice standards, (d)(3) Monitor downtime incidents**

Number (d)(3)	Type And Description (Deviation Of Emission Limit and Work Practice Standard, or Monitor Downtime) (d)(2), (d)(3)	Date, Time and Duration of Deviation	Duration (hours)	Cause (Including Unknown, if Applicable)
1	(d)(3) Monitor downtime	7/8/2019 9:00 to 10:00 hours	1	Failed Part 63 daily validation.
2	(d)(3) Monitor downtime	7/23/2019 9:00 to 7/24/2019 9:00 hours	24	Failed Part 63 daily validation.
3	(d)(3) Monitor downtime	8/7/2019 14:00 to 8/8/2019 9:00	19	Failed Part 63 daily validation.
4	(d)(3) Monitor downtime	11/14/2019 7:00 to 11:00	4	Failed Part 63 daily validation.
5	(d)(3) Monitor downtime	12/13/2019 13:00 to 14:00	1	Failed Part 63 daily validation.
6	(d)(3) Monitor downtime	12/26/2019 7:00 to 13:00	6	Failed Part 63 daily validation.

**PROVIDE THE INFORMATION IN THE TABLE BELOW ONLY FOR THE CORRESPONDING REGULATORY REQUIREMENTS FOR EACH DEVIATION FROM AN EMISSION LIMITATION**

**(d)(3) – Monitor Downtime, (e)(2) – COMS/CEMS Inoperative, (e)(3) – COMS/CEMS Out of Control**

Number (d)(3)	Date/Time Start	Date/Time End	Duration (hours)	Cause (Including Unknown, if Applicable)	Type (Downtime, Inoperative, Out of Control)	Corrective Action For Each Out of Control Period
	(d)(3), (e)(2) - (e)(3)	(e)(2) - (e)(3)				
1	7/8/2019 9:00	7/8/2019 10:00	1	Failed Part 63 daily validation.	Recalibration for drift.	Recalibrated analyzer.
2	7/23/2019 9:00	7/24/2019 9:00	24	Failed Part 63 daily validation.	Analyzer failed daily validation.	Recalibrated analyzer.
3	8/7/2019 14:00	8/8/2019 9:00	19	Failed Part 63 daily validation.	Thermal oxidizer trip due to hydrocarbon carryover to SRU1.	Unit was shutdown to hot standby.
4	11/14/2019 7:00	11/14/2019 11:00	4	Failed Part 63 daily validation.	Analyzer failed daily validation.	Recalibrated analyzer
5	12/13/2019 13:00	12/13/2019 14:00	1	Failed Part 63 daily validation.	Analyzer failed daily validation.	Recalibrated analyzer.
6	12/26/2019 7:00	12/26/2019 13:00	6	Failed Part 63 daily validation.	Analyzer failed daily validation.	Recalibrated analyzer.

**PROVIDE THE DEVIATION SUMMARY IN THE TABLES BELOW**

**(e)(5)/(e)(7) – Deviation Summary, (e)(6)/(e)(8) – Deviation Breakdown**

Emissions Data Deviation Summary (e)(5), (e)(6)		COMS/CEMS Performance Summary (e)(7), (e)(8)	
Duration of the deviations during reporting period due to:		1. COMS / CEMS downtime in reporting period due to	
a. Control equipment problems	Time in hours 0	a. Monitoring equipment malfunctions	Time in hours 36
b. Process problems	0	b. Non-monitoring equipment malfunctions	19
c. Other known causes	0	c. Quality assurances/quality control calibrations	0
d. Unknown causes	0	d. Other known causes	0
		e. Unknown causes	0
2. Summary of the total duration of the deviation	0	2. Total COMS / CEMS downtime	55
3. (Total duration of the deviation) / (Total source operating time) x (100) = %	0%	3. (Total COMS/CEMS downtime) / (Total affected source operating time)) x (100) = %	1.3%

**(e)(13) - Describe any changes since the last reporting period in the CEMS or COMS, processes, or controls.**

No changes made during the reporting period.

**PERFORMANCE TEST SUMMARY AND REQUESTED EMISSION STANDARD CHANGES**

**(f)(1)** - There was no performance test conducted during this reporting period.

**(f)(1)** - There was no performance evaluation on the SRU 1 SO<sub>2</sub> CEMS during this reporting period.

**(f)(2) – Provide any changes to an emission standard being requested in this report.**

No changes made during the reporting period.

**P009 SRU 1 AND TAIL GAS TREATER VENT TO THERMAL OXIDIZER – REFINERY MACT II COMPLIANCE REPORT**

**DEVIATION SUMMARY FOR A COMS AND/OR A CEMS**

**Affected Source:** P009 SRU 1 and Tail Gas Treater Vent to Thermal Oxidizer

**Pollutant/Parameter:** O<sub>2</sub>

**Emission Limit:** NA – Used to correct SO<sub>2</sub> data to 0% excess air

- (e)(9) HAP monitored at the affected source and reported here: O<sub>2</sub> (used to correct SO<sub>2</sub>, surrogate for reduced sulfur HAPs)
- (e)(10) Process Unit(s) Description: Existing sulfur recovery unit with one Claus Train and Tail Gas Treater.
- (e)(11) COMS/CEMS Manufacturer And Model No.: Ametek Model No. 919 O<sub>2</sub>
- (e)(12) Date of latest certification or audit for the COMS or CEMS: 4/16/2019
- (d)(1) Total operating time of the affected source during the reporting period: 4,156.5 hours

**PROVIDE THE INFORMATION IN THE TABLE BELOW ONLY FOR THE CORRESPONDING REGULATORY REQUIREMENTS**

(d)(2) Emission limitation and work practice standards, (d)(3) Monitor downtime incidents

Number (d)(3)	Type And Description (Deviation Of Emission Limit and Work Practice Standard, or Monitor Downtime) (d)(2), (d)(3)	Date, Time and Duration of Deviation	Duration (hours)	Cause (Including Unknown, if Applicable)
None				

**PROVIDE THE INFORMATION IN THE TABLE BELOW ONLY FOR THE CORRESPONDING REGULATORY REQUIREMENTS FOR EACH DEVIATION FROM AN EMISSION LIMITATION**

(d)(3) – Monitor Downtime, (e)(2) – COMS/CEMS Inoperative, (e)(3) – COMS/CEMS Out of Control

Number (d)(3)	Date/Time Start (d)(3), (e)(2) - (e)(3)	Date/Time End (e)(2) - (e)(3)	Duration (hours)	Cause (including Unknown, if Applicable)	Corrective Action For Each Out of Control Period	
					Type (Downtime, Inoperative, Out of Control) (e)(2) - (e)(3)	(e)(3), 63.8(c)(8)
None						

**PROVIDE THE DEVIATION SUMMARY IN THE TABLES BELOW**

**(e)(5)/(e)(7) – Deviation Summary, (e)(6)/(e)(8) – Deviation Breakdown**

<b>Emissions Data Deviation Summary</b>		<b>COMS/CEMS Performance Summary</b>	
<b>(e)(5), (e)(6)</b>		<b>(e)(7), (e)(8)</b>	
1. Duration of the deviations during reporting period due to:	Time in hours	1. COMS / CEMS downtime in reporting period due to	Time in hours
a. Control equipment problems	NA	a. Monitoring equipment malfunctions	0
b. Process problems	NA	b. Non-monitoring equipment malfunctions	0
c. Other known causes	NA	c. Quality assurance/quality control calibrations	0
d. Unknown causes	NA	d. Other known causes	0
		e. Unknown causes	0
2. Summary of the total duration of the deviation	NA	2. Total COMS / CEMS downtime	0
3. (Total duration of the deviation) / (Total source operating time) x (100) = %	NA	3. ((Total COMS/CEMS downtime) / (Total affected source operating time)) x (100) = %	0%

**(e)(13) - Describe any changes since the last reporting period in the CEMS or COMS, processes, or controls.**

No changes made during the reporting period.

**PERFORMANCE TEST SUMMARY AND REQUESTED EMISSION STANDARD CHANGES**

**(f)(1)** - There was no performance test conducted during this reporting period.

**(f)(1)** - There was no performance evaluation conducted on the SRU 1 O<sub>2</sub> CEMS during this reporting period.

**(f)(2) – Provide any changes to an emission standard being requested in this report.**

No changes made during the reporting period.

**P009 SRU 1 AND TAIL GAS TREATER VENT TO THERMAL OXIDIZER – REFINERY MACT II COMPLIANCE REPORT**

**DEVIATION SUMMARY FOR A COMS AND/OR A CEMS**

**Affected Source:** P009 SRU 1 and Tail Gas Treater Vent to Thermal Oxidizer during SRU Startup and Shutdown Events

**Pollutant/Parameter:** O<sub>2</sub>

**Operating Limit:** ≥2% O<sub>2</sub> during SRU Startup and Shutdown Events

**(e)(9) HAP monitored at the affected source and reported here:** O<sub>2</sub> (surrogate for reduced sulfur HAPs)

**(e)(10) Process Unit(s) Description:** Existing sulfur recovery unit with one Claus Train and Tail Gas Treater.

**(e)(11) COMS/CEMS Manufacturer and Model No.:** Ametek Model No. 919 O<sub>2</sub>

**(e)(12) Date of latest certification or audit for the COMS or CEMS:** 4/16/2019

**(d)(1) Total startup and shutdown time of the affected source during the reporting period:** 260.46 hours (startup & shutting down)

**PROVIDE THE INFORMATION IN THE TABLE BELOW ONLY FOR THE CORRESPONDING REGULATORY REQUIREMENTS**

**(d)(2) Emission limitation and work practice standards, (d)(3) Monitor downtime incidents**

Number (d)(3)	Type And Description (Deviation Of Emission Limit and Work Practice Standard, or Monitor Downtime) (d)(2), (d)(3)	Date, Time and Duration of Deviation	Duration (hours)	Cause (Including Unknown, if Applicable)
None				

**PROVIDE THE INFORMATION IN THE TABLE BELOW ONLY FOR THE CORRESPONDING REGULATORY REQUIREMENTS FOR EACH DEVIATION FROM AN EMISSION LIMITATION**

**(d)(3) – Monitor Downtime, (e)(2) – COMS/CEMS Inoperative, (e)(3) – COMS/CEMS Out of Control**

Number (d)(3)	Date/Time Start (d)(3), (e)(2) - (e)(3)	Date/Time End (e)(2) - (e)(3)	Duration (hours)	Cause (Including Unknown, if Applicable)	Type (Downtime, Inoperative, Out of Control)	Corrective Action For Each Out of Control Period
None						

**PROVIDE THE DEVIATION SUMMARY IN THE TABLES BELOW**

**(e)(5)/(e)(7) – Deviation Summary, (e)(6)/(e)(8) – Deviation Breakdown**

<b>Emissions Data Deviation Summary</b>		<b>COMS/CEMS Performance Summary</b>	
<b>(e)(5), (e)(6)</b>		<b>(e)(7), (e)(8)</b>	
Duration of the deviations during reporting period due to:		COMS / CEMS downtime in reporting period due to	
	Time in hours		Time in hours
1. Control equipment problems	0	a. Monitoring equipment malfunctions	0
b. Process problems	0	b. Non-monitoring equipment malfunctions	0
c. Other known causes	0	c. Quality assurance/quality control calibrations	0
d. Unknown causes	0	d. Other known causes	0
		e. Unknown causes	0
2. Summary of the total duration of the deviation	0	2. Total COMS / CEMS downtime	0
3. $(\text{Total duration of the deviation}) / (\text{Total source operating time}) \times 100 = \%$	0%	3. $(\text{Total COMS/CEMS downtime}) / (\text{Total affected source operating time}) \times 100 = \%$	0%

**(e)(13) - Describe any changes since the last reporting period in the CEMS or COMS, processes, or controls.**

No changes made during the reporting period.

**PERFORMANCE TEST SUMMARY AND REQUESTED EMISSION STANDARD CHANGES**

**(f)(1)** - There was no performance test conducted during this reporting period.

**(f)(1)** - There was no performance evaluation conducted on the SRU 1 O<sub>2</sub> CEMS during this reporting period. (Note: This is the same O<sub>2</sub> CEMS used for adjusting the SO<sub>2</sub> CEMS to 0% excess air.)

**(f)(2) – Provide any changes to an emission standard being requested in this report.**

No changes made during the reporting period.

**P009 SRU 1 AND TAIL GAS TREATER VENT TO THERMAL OXIDIZER – REFINERY MACT II COMPLIANCE REPORT**

**DEVIATION SUMMARY FOR PARAMETER MONITORING SYSTEMS (NO COMS/CEMS)**

**Affected Source:** P009 SRU 1 and Tail Gas Treater Vent to Thermal Oxidizer during SRU Startup and Shutdown Events

**Pollutant/Parameter Monitored:** Temperature in firebox of Thermal Oxidizer

**Operating Limit:** Maintain  $\geq 1,200$  °F during SRU Startup and Shutdown Events.

**(d)(1)\* Total startup and shutdown time during the reporting period:** 260.46 hours (startup & shutting down)

**PROVIDE THE INFORMATION IN THE TABLE BELOW ONLY FOR THE CORRESPONDING REGULATORY REQUIREMENTS**

**(d)(2) Emission limitation and work practice standards, (d)(3) Monitor downtime incidents**

Number (d)(3)	Type And Description (Deviation Of Emission Limit and Work Practice Standard, or Monitor Downtime) (d)(2), (d)(3)	Date, Time and Duration of Deviation	Duration (hours)	Cause (Including Unknown, if Applicable)
(d)(2)	Thermal oxidizer temperature < 1200 deg F during SD/SU	8/7/2019 10:41 to 8/7/2019 16:27	5.75	Thermal Oxidizer trip

\* All document references are from 40 CFR 63.1575 unless otherwise specifically indicated.

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 BP Husky Toledo Refinery  
 For FCUs, CRUs and SRPs  
 January 30, 2020

**P037 - SRU 2 & 3 (TRP SRU) AND TAIL GAS TREATER VENT TO THERMAL OXIDIZER – REFINERY MACT II COMPLIANCE REPORT**

**DEVIATION SUMMARY FOR A COMS AND/OR A CEMS**

**Affected Source:** P037 - SRU 2 & 3 (TRP SRU) and Tail Gas Treater Vent to Thermal Oxidizer

**Pollutant/Parameter:** SO<sub>2</sub>

**Emission Limit:** 250 ppm<sub>v</sub> dry basis of reduced sulfur compounds calculated as SO<sub>2</sub> at 0% excess air

(e)(9) HAP monitored at the affected source and reported here: SO<sub>2</sub> (surrogate for reduced sulfur HAPs)

(e)(10) Process Unit(s) Description: Two existing Claus Trains and one shared Tail Gas Treater.

(e)(11) COMS/CEMS Manufacturer and Model No.: Ametek Model No. 4600

(e)(12) Date of latest certification or audit for the COMS or CEMS: 4/17/2019

(d)(1) Total operating time of the affected source during the reporting period: 4,416 hours

**PROVIDE THE INFORMATION IN THE TABLE BELOW ONLY FOR THE CORRESPONDING REGULATORY REQUIREMENTS**

(d)(2) Emission limitation and work practice standards, (d)(3) Monitor downtime incidents

Number (d)(3)	Type And Description (Deviation Of Emission Limit and Work Practice Standard, or Monitor Downtime) (d)(2), (d)(3)	Date, Time and Duration of Deviation	Duration (hours)	Cause (Including Unknown, if Applicable)
1	(d)(3) Monitor Downtime	7/1/2019 0:00 to 7/2/2019 11:00	35	Missing validation.
2	(d)(3) Monitor Downtime	7/2/2019 9:00 to 7/2/2019 11:00	2	Analyzer failed daily validation.
3	(d)(3) Monitor Downtime	7/8/2019 7:00 to 7/8/2019 9:00	2	Analyzer failed daily validation.
4	(d)(3) Monitor Downtime	7/23/2019 7:00 to 7/23/2019 10:00	3	Analyzer failed daily validation.
5	(d)(3) Monitor Downtime	7/30/2019 7:00 to 7/30/2019 10:00	3	Analyzer failed daily validation.
6	(d)(3) Monitor Downtime	8/4/2019 7:00 to 8/4/2019 8:00	1	Analyzer failed daily validation.

Number (d)(3)	Type And Description (Deviation Of Emission Limit and Work Practice Standard, or Monitor Downtime) (d)(2), (d)(3)	Date, Time and Duration of Deviation	Duration (hours)	Cause (Including Unknown, if Applicable)
7	(d)(3) Monitor Downtime	8/6/2019 7:00 to 8/6/2019 13:00	6	Analyzer failed daily validation.
8	(d)(3) Monitor Downtime	8/8/2019 9:00 to 8/8/2019 10:00	1	Recalibration for drift.
9	(d)(3) Monitor Downtime	8/11/2019 7:00 to 8/11/2019 8:00	1	Analyzer failed daily validation.
10	(d)(3) Monitor Downtime	8/14/2019 7:00 to 8/14/2019 10:00	3	Analyzer failed daily validation.
11	(d)(3) Monitor Downtime	8/14/2019 10:00 to 8/14/2019 11:00	1	Recalibration for drift.
12	(d)(3) Monitor Downtime	8/14/2019 13:00 to 8/14/2019 16:00	3	Recalibration for drift.
13	(d)(3) Monitor Downtime	8/17/2019 7:00 to 8/18/2019 8:00	25	Analyzer failed daily validation.
14	(d)(3) Monitor Downtime	8/18/2019 7:00 to 8/18/2019 9:00	2	Analyzer failed daily validation.
15	(d)(3) Monitor Downtime	8/20/2019 7:00 to 8/20/2019 9:00	2	Analyzer failed daily validation.
16	(d)(3) Monitor Downtime	10/8/2019 7:00 to 10/8/2019 14:00	7	Analyzer failed daily validation.
17	(d)(3) Monitor Downtime	10/15/2019 7:00 to 10/15/2019 10:00	3	Analyzer failed daily validation.
18	(d)(3) Monitor Downtime	10/23/2019 7:00 to 10/23/2019 9:00	2	Analyzer failed daily validation.
19	(d)(3) Monitor Downtime	10/31/2019 7:00 to 10/31/2019 10:00	3	Analyzer failed daily validation.
20	(d)(3) Monitor Downtime	11/13/2019 7:00 to 11/13/2019 12:00	5	Analyzer failed daily validation
21	(d)(3) Monitor Downtime	11/13/2019 12:00 to 11/13/2019 13:00	1	Recalibrated for Drift.
22	(d)(3) Monitor Downtime	11/13/2019 16:00 to 11/17/2019 11:00	91	Analyzer sample line plugged
23	SO2 reading >250 ppm 12-hr average, Emissions Limit Exceedance	11/18/2019 11:00 to 11/18/2019 20:00	9	CO Boiler Trip upset the steam supply, which upset several units including instability and pluggage in SRU 2/3 TGTU
24	(d)(3) Monitor Downtime	12/26/2019 7:00 to 12/26/2019 11:00	4	Analyzer failed daily validation.

**PROVIDE THE INFORMATION IN THE TABLE BELOW ONLY FOR THE CORRESPONDING REGULATORY REQUIREMENTS FOR EACH**

**DEVIATION FROM AN EMISSION LIMITATION**

**(d)(3) – Monitor Downtime, (e)(2) – COMS/CEMS Inoperative, (e)(3) – COMS/CEMS Out of Control**

Number (d)(3)	Date/Time Start (d)(3), (e)(2) - (e)(3)	Date/Time End (e)(2) - (e)(3)	Duration (hours)	Cause (Including Unknown, if Applicable)	Type (Downtime, Inoperative, Out of Control)	Corrective Action For Each Out of Control Period
1	7/1/2019 0:00	7/2/2019 11:00	35	Missing validation.	CEMS out-of-control	Recalibrated analyzer and returned to service.
2	7/2/2019 9:00	7/2/2019 11:00	2	Analyzer failed daily validation.	CEMS out-of-control	Recalibrated analyzer and returned to service.
3	7/8/2019 7:00	7/8/2019 9:00	2	Analyzer failed daily validation.	CEMS out-of-control	Recalibrated analyzer and returned to service.
4	7/23/2019 7:00	7/23/2019 10:00	3	Analyzer failed daily validation.	CEMS out-of-control	Recalibrated analyzer and returned to service.
5	7/30/2019 7:00	7/30/2019 10:00	3	Analyzer failed daily validation.	CEMS out-of-control	Recalibrated analyzer and returned to service.
6	8/4/2019 7:00	8/4/2019 8:00	1	Analyzer failed daily validation.	CEMS out-of-control	Recalibrated analyzer and returned to service.
7	8/6/2019 7:00	8/6/2019 13:00	6	Analyzer failed daily validation.	CEMS out-of-control	Recalibrated analyzer and returned to service.
8	8/8/2019 9:00	8/8/2019 10:00	1	Recalibration for drift.	CEMS out-of-control	Recalibrated analyzer and returned to service.
9	8/11/2019 7:00	8/11/2019 8:00	1	Analyzer failed daily validation.	CEMS out-of-control	Recalibrated analyzer and returned to service.
10	8/14/2019 7:00	8/14/2019 10:00	3	Analyzer failed daily validation.	CEMS out-of-control	Recalibrated analyzer and returned to service.
11	8/14/2019 10:00	8/14/2019 11:00	1	Recalibration for drift.	CEMS out-of-control	Recalibrated analyzer and returned to service.
12	8/14/2019 13:00	8/14/2019 16:00	3	Recalibration for drift.	CEMS out-of-control	Recalibrated analyzer and returned to service.
13	8/17/2019 7:00	8/18/2019 8:00	25	Analyzer failed daily validation.	CEMS out-of-control	Recalibrated analyzer and returned to service.
14	8/18/2019 7:00	8/18/2019 9:00	2	Analyzer failed daily validation.	CEMS out-of-control	Recalibrated analyzer and returned to service.
15	8/20/2019 7:00	8/20/2019 9:00	2	Analyzer failed daily validation.	CEMS out-of-control	Recalibrated analyzer and returned to service.

Number	Date/Time Start (d)(3), (e)(2) - (e)(3)	Date/Time End (e)(2) - (e)(3)	Duration (hours)	Cause (Including Unknown, if Applicable)	Type (Downtime, Inoperative, Out of Control) (e)(2) - (e)(3)	Corrective Action For Each Out of Control Period (e)(3), 63.8(c)(8)
16	10/8/2019 7:00	10/8/2019 14:00	7	Analyzer failed daily validation.	CEMS out-of-control	Recalibrated analyzer and returned to service.
17	10/15/2019 7:00	10/15/2019 10:00	3	Analyzer failed daily validation.	CEMS out-of-control	Recalibrated analyzer and returned to service.
18	10/23/2019 7:00	10/23/2019 9:00	2	Analyzer failed daily validation.	CEMS out-of-control	Recalibrated analyzer and returned to service.
19	10/31/2019 7:00	10/31/2019 10:00	3	Analyzer failed daily validation.	CEMS out-of-control	Recalibrated analyzer and returned to service.
20	11/13/2019 7:00	11/13/2019 12:00	5	Analyzer failed daily validation.	CEMS out-of-control	Recalibrated analyzer and returned to service.
21	11/13/2019 12:00	11/13/2019 13:00	1	Recalibrated for Drift	CEMS out-of-control	Recalibrated analyzer and returned to service.
22	11/13/2019 16:00	11/17/2019 11:00	91	Sample Line Plugged.	CEMS out-of-control	Unplugged Sample Line and returned to service.
24	12/26/2019 7:00	12/26/2019 11:00	4	Analyzer failed daily validation.	CEMS out-of-control	Recalibrated analyzer and returned to service.

**PROVIDE THE DEVIATION SUMMARY IN THE TABLES BELOW**

**(e)(5)/(e)(7) -- Deviation Summary, (e)(6)/(e)(8) – Deviation Breakdown**

Emissions Data Deviation Summary (e)(5), (e)(6)		COMS/CEMS Performance Summary (e)(7), (e)(8)	
Duration of the deviations during reporting period due to:		COMS / CEMS downtime in reporting period due to	
1. Control equipment problems	Time in hours 0	a. Monitoring equipment malfunctions	Time in hours 206
b. Process problems	9	b. Non-monitoring equipment malfunctions	0
c. Other known causes	0	c. Quality assurance/quality control calibrations	0
d. Unknown causes	0	d. Other known causes	0
		e. Unknown causes	0
2. Summary of the total duration of the deviation	9	2. Total COMS / CEMS downtime	206
3. (Total duration of the deviation) / (Total source operating time) x (100) = %	0.2%	3. ((Total COMS/CEMS downtime) / (Total affected source operating time)) x (100) = %	4.67%

**(e)(13) - Describe any changes since the last reporting period in the CEMS or COMS, processes, or controls.**

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No changes made during the reporting period.

**PERFORMANCE TEST SUMMARY AND REQUESTED EMISSION STANDARD CHANGES**

**(f)(1)** - There was no performance test conducted during this reporting period.

**(f)(1)** - There was no performance evaluation conducted on the TRP SRU SO<sub>2</sub> CEMS during this reporting period

**(f)(2)** – **Provide any changes to an emission standard being requested in this report.**

No changes being requested in this report.

**DEVIATION SUMMARY FOR A COMS AND/OR A CEMS**

**Affected Source:** P037 - SRU 2 & 3 (TRP SRU) and Tail Gas Treater Vent to Thermal Oxidizer

**Pollutant/Parameter:** O<sub>2</sub>

**Emission Limit:** NA – Used to correct SO<sub>2</sub> data to 0% excess air

(e)(9) HAP monitored at the affected source and reported here: O<sub>2</sub> (used to correct SO<sub>2</sub> surrogate for reduced sulfur HAPs)

(e)(10) Process Unit(s) Description: Two existing Claus Trains and one shared Tail Gas Treater.

(e)(11) COMS/CEMS Manufacturer And Model No.: Ametek Model No. 919

(e)(12) Date of latest certification or audit for the COMS or CEMS: 4/17/2019

(d)(1) Total operating time of the affected source during the reporting period: 4,416 hours

**PROVIDE THE INFORMATION IN THE TABLE BELOW ONLY FOR THE CORRESPONDING REGULATORY REQUIREMENTS**

(d)(2) Emission limitation and work practice standards, (d)(3) Monitor downtime incidents

Number (d)(3)	Type And Description (Deviation Of Emission Limit and Work Practice Standard, or Monitor Downtime) (d)(2), (d)(3)	Date, Time and Duration of Deviation	Duration (hours)	Cause (Including Unknown, if Applicable)
None				

**PROVIDE THE INFORMATION IN THE TABLE BELOW ONLY FOR THE CORRESPONDING REGULATORY REQUIREMENTS FOR EACH DEVIATION FROM AN EMISSION LIMITATION**

(d)(3) – Monitor Downtime, (e)(2) – COMS/CEMS Inoperative, (e)(3) – COMS/CEMS Out of Control

Number (d)(3)	Date/Time Start (d)(3), (e)(2) - (e)(3)	Date/Time End (e)(2) - (e)(3)	Duration (hours)	Cause (Including Unknown, if Applicable)	Type (Downtime, Inoperative, Out of Control)	Corrective Action For Each Out of Control Period
	None					(e)(2) - (e)(3)

**PROVIDE THE DEVIATION SUMMARY IN THE TABLES BELOW**

<b>(e)(5)/(e)(7) – Deviation Summary, (e)(6)/(e)(8) – Deviation Breakdown</b>		<b>(e)(7), (e)(8)</b>	
<b>Emissions Data Deviation Summary</b>		<b>COMS/CEMS Performance Summary</b>	
<b>(e)(5), (e)(6)</b>		<b>(e)(7), (e)(8)</b>	
Duration of the deviations during reporting period due to:	Time in hours	1. COMS / CEMS downtime in reporting period due to	Time in hours
a. Control equipment problems	NA	a. Monitoring equipment malfunctions	0
b. Process problems	NA	b. Non-monitoring equipment malfunctions	0
c. Other known causes	NA	c. Quality assurance/quality control calibrations	0
d. Unknown causes	NA	d. Other known causes	0
		e. Unknown causes	0
2. Summary of the total duration of the deviation	NA	2. Total COMS / CEMS downtime	0
3. $(\text{Total duration of the deviation}) / (\text{Total source operating time}) \times (100) = \%$	NA	3. $(\text{Total COMS/CEMS downtime}) / (\text{Total affected source operating time}) \times (100) = \%$	0%

**(e)(13) - Describe any changes since the last reporting period in the CEMS or COMS, processes, or controls.**

No changes made during the reporting period.

**PERFORMANCE TEST SUMMARY AND REQUESTED EMISSION STANDARD CHANGES**

**(f)(1) -** There was no performance test conducted during this reporting period.

**(f)(1) -** There was no performance evaluation conducted on the TRP SRU O<sub>2</sub> CEMS during this reporting period

**(f)(2) – Provide any changes to an emission standard being requested in this report.**

No changes made during the reporting period.

**P037 - SRU 2 & 3 (TRP SRU) AND TAIL GAS TREATER VENT TO THERMAL OXIDIZER – REFINERY MACT II COMPLIANCE REPORT  
DEVIATION SUMMARY FOR A COMS AND/OR A CEMS**

**Affected Source:** P037 - SRU 2 & 3 (TRP SRU) and Tail Gas Treater Vent to Thermal Oxidizer during SRU Startup and Shutdown Events

**Pollutant/Parameter:** O<sub>2</sub>  
**Emission Limit:** ≥2% O<sub>2</sub> during SRU Startup and Shutdown Events

- (e)(9) HAP monitored at the affected source and reported here: O<sub>2</sub>
- (e)(10) Process Unit(s) Description: Two existing Claus Trains and one shared Tail Gas Treater.
- (e)(11) COMS/CEMS Manufacturer And Model No.: Ametek Model No. 919
- (e)(12) Date of latest certification or audit for the COMS or CEMS: 4/16/2019
- (d)(1) Total startup and shutdown time of the affected source during the reporting period: 0 hours

**PROVIDE THE INFORMATION IN THE TABLE BELOW ONLY FOR THE CORRESPONDING REGULATORY REQUIREMENTS**

(d)(2) Emission limitation and work practice standards, (d)(3) Monitor downtime incidents

Number (d)(3)	Type And Description (Deviation Of Emission Limit and Work Practice Standard, or Monitor Downtime) (d)(2), (d)(3)	Date, Time and Duration of Deviation		Duration (hours)	Cause (Including Unknown, if Applicable)
None					

**PROVIDE THE INFORMATION IN THE TABLE BELOW ONLY FOR THE CORRESPONDING REGULATORY REQUIREMENTS FOR EACH DEVIATION FROM AN EMISSION LIMITATION**

(d)(3) – Monitor Downtime, (e)(2) – COMS/CEMS Inoperative, (e)(3) – COMS/CEMS Out of Control

Number (d)(3)	Date/Time Start (d)(3), (e)(2) - (e)(4)	Date/Time End (e)(2) - (e)(4)	Duration (hours)	Cause (Including Unknown, if Applicable)	Type (Downtime, Inoperative, Out of Control)	Corrective Action For Each Out of Control Period (e)(3), 63.8(c)(8)
					(e)(2) - (e)(4)	
None						

**PROVIDE THE DEVIATION SUMMARY IN THE TABLES BELOW**

<b>(e)(5)/(e)(7) – Deviation Summary, (e)(6)/(e)(8) – Deviation Breakdown</b>		<b>COMS/CEMS Performance Summary</b>	
<b>Emissions Data Deviation Summary</b>		<b>(e)(7), (e)(8)</b>	
<b>(e)(5), (e)(6)</b>			
Duration of the deviations during reporting period due to:		Time in hours	Time in hours
a. Control equipment problems		0	0
b. Process problems		0	0
c. Other known causes		0	0
d. Unknown causes		0	0
Summary of the total duration of the deviation		0	0
3. $(\text{Total duration of the deviation}) / (\text{Total source operating time}) \times (100) = \%$		0%	0%
1. COMS / CEMS downtime in reporting period due to			
a. Monitoring equipment malfunctions			
b. Non-monitoring equipment malfunctions			
c. Quality assurance/quality control calibrations			
d. Other known causes			
e. Unknown causes			
2. Total COMS / CEMS downtime			
3. $(\text{Total COMS/CEMS downtime}) / (\text{Total affected source operating time}) \times (100) = \%$			

**(e)(13) - Describe any changes since the last reporting period in the CEMS or COMS, processes, or controls.**

No changes made during the reporting period.

**PERFORMANCE TEST SUMMARY AND REQUESTED EMISSION STANDARD CHANGES**

**(f)(1) -** There was no performance test conducted during this reporting period.

**(f)(1) -** There was no performance evaluation conducted on the TRP SRU O<sub>2</sub> CEMS during this reporting period. (Note: This is the same O<sub>2</sub> CEMS used to correct the SO<sub>2</sub> CEMS data to 0% excess air.)

**(f)(2) – Provide any changes to an emission standard being requested in this report.**

No changes being requested in this report.

**P037 - SRU 2 & 3 (TRP SRU) AND TAIL GAS TREATER VENT TO THERMAL OXIDIZER — REFINERY MACT II COMPLIANCE REPORT**

**DEVIATION SUMMARY FOR PARAMETER MONITORING SYSTEMS (NO COMS/CEMS)**

**Affected Source:** P037 SRU 2 & 3 (TRP SRU) and Tail Gas Treater Vent to Thermal Oxidizer during Startup and Shutdown Events

**Pollutant/Parameter Monitored:** Temperature in firebox of Thermal Oxidizer

**Operating Limit:** Maintain  $\geq$  1,200 °F during SRU Startup and Shutdown Events.

(d)(1)\* Total startup and shutdown time during the reporting period: 0 hours

**PROVIDE THE INFORMATION IN THE TABLE BELOW ONLY FOR THE CORRESPONDING REGULATORY REQUIREMENTS**

(d)(2) Emission limitation and work practice standards, (d)(3) Monitor downtime incidents

Number (d)(3)	Type And Description (Deviation Of Emission Limit and Work Practice Standard, or Monitor Downtime) (d)(2), (d)(3)	Date, Time and Duration of Deviation	Duration (hours)	Cause (Including Unknown, if Applicable)
None				

\* All document references are from 40 CFR 63.1575 unless otherwise specifically indicated.

**CRU CATALYST REGENERATION VENT – REFINERY MACT II COMPLIANCE REPORT**

**DEVIATION SUMMARY FOR PARAMETER MONITORING SYSTEM (NO COMS/CEMS)**

**Affected Source:** CRU Catalyst Regeneration Vent

**Pollutant/Parameter Monitored:** HCl in regenerator vent emissions (temperature as alternate monitoring parameter)

**Emission Limit:** Maximum daily average Chlorsorb™ entering gas temperature limit of 387.2 °F (during coke burn and rejuvenation phases of catalyst regeneration) as an alternate monitoring parameter for reducing HCl emissions by 97 weight %.  
**Operating Limit:** Daily average temperature must not exceed 387.2 °F, the limit established during performance test.

(d)(1) Total operating time of the affected source during the reporting period: 4,416 hours

(d)(1) Total time regeneration took place during the reporting period: 3,435 hours

**PROVIDE THE INFORMATION IN THE TABLE BELOW ONLY FOR THE CORRESPONDING REGULATORY REQUIREMENTS**

(d)(2) Emission limitation and work practice standards, (d)(3) Monitor downtime incidents

Number (d)(3)	Type And Description (Deviation Of Emission Limit and Work Practice Standard, or Monitor Downtime) (d)(2), (d)(3)	Date, Time and Duration of Deviation	Duration (hours)	Cause (Including Unknown, if Applicable)
None				

(e)(13) - Describe any changes since the last reporting period in the CEMS or COMS, processes, or controls.  
 No changes made during the reporting period.

**PERFORMANCE TEST SUMMARY AND REQUESTED EMISSION STANDARD CHANGES**

(f)(1) - There was no performance test conducted during this reporting period.

(f)(1) - There are no MACT UUU CEMS in the Reformer 3 unit.

(f)(2) – Provide any changes to an emission standard being requested in this report.

No changes being requested in this report.

**DEVIATION SUMMARY FOR PARAMETER MONITORING SYSTEM (NO COMS/CEMS)**

**Affected Source:** CRU Catalyst Regeneration Vent

**Pollutant/Parameter Monitored:** HCl in regenerator vent emissions (chloride concentration as alternate monitoring parameter)

**Emission Limit:** Maximum weekly average inlet Chlorso<sup>TM</sup>rb catalyst chloride concentration limit of 1.35 wt % during coke burn and rejuvenation phases of catalyst regeneration) as an alternate monitoring parameter for reducing HCl emissions by 97 wt %

**Operating Limit:** Weekly average chloride concentration must not exceed 1.35 wt %.

(d)(1) Total operating time of the affected source during the reporting period: 4416 hours

(d)(1) Total time regeneration took place during the reporting period: 3,435 hours

**PROVIDE THE INFORMATION IN THE TABLE BELOW ONLY FOR THE CORRESPONDING REGULATORY REQUIREMENTS**

(d)(2) Emission limitation and work practice standards, (d)(3) Monitor downtime incidents

Number	Type And Description (Deviation Of Emission Limit and Work Practice Standard, or Monitor Downtime) (d)(2), (d)(3)	Date, Time and Duration of Deviation	Cause (Including Unknown, if Applicable)
None			

(e)(13) - Describe any changes since the last reporting period in the CEMS or COMS, processes, or controls.

No changes made during the reporting period.

**PERFORMANCE TEST SUMMARY AND REQUESTED EMISSION STANDARD CHANGES**

(f)(1) - There was no performance test conducted during this reporting period.

(f)(1) - There are no MACT UUU CEMS in the Reformer 3 unit.

(f)(2) – Provide any changes to an emission standard being requested in this report.

No changes being requested in this report.

**DEVIATION SUMMARY FOR PARAMETER MONITORING SYSTEM (NO COMS/CEMS)**

**Affected Source:** CRU Catalyst Regeneration Vent

**Pollutant/Parameter Monitored:** HCl in regenerator vent emissions (chloride concentration as alternate monitoring parameter)

**Emission Limit:** Maximum weekly average outlet Chlororb™ catalyst chloride concentration limit of 1.8 wt % during coke burn and rejuvenation phases of catalyst regeneration) as an alternate monitoring parameter for reducing HCl emissions by 97 wt %

**Operating Limit:** Weekly average chloride concentration must not exceed 1.8 wt %

(d)(1) Total operating time of the affected source during the reporting period: 4416 hours

(d)(1) Total time regeneration took place during the reporting period: 3,435 hours

**PROVIDE THE INFORMATION IN THE TABLE BELOW ONLY FOR THE CORRESPONDING REGULATORY REQUIREMENTS**

(d)(2) Emission limitation and work practice standards, (d)(3) Monitor downtime incidents

Number	Type And Description (Deviation Of Emission Limit and Work Practice Standard, or Monitor Downtime) (d)(2), (d)(3)	Date, Time and Duration of Deviation	Cause (Including Unknown, if Applicable)
None			

(e)(13) - Describe any changes since the last reporting period in the CEMS or COMS, processes, or controls.

No changes made during the reporting period.

**PERFORMANCE TEST SUMMARY AND REQUESTED EMISSION STANDARD CHANGES**

(f)(1) - There was no performance test conducted during this reporting period.

(f)(1) - There are no MACT UUU CEMS in the Reformer 3 unit.

(f)(2) – Provide any changes to an emission standard being requested in this report.

No changes being requested in this report.